HW Questions (Salmon-colored Worksheet)

① Choose Blue, Choose yellow

$$\frac{6 \text{ (\# of B cards)}}{15 \text{ (total)}} \cdot \frac{5 \text{ (\# of yellow cards)}}{14 \text{ (total)}}$$

$$\frac{1}{\cancel{3}} \cdot \frac{\cancel{3}}{1} = 1$$

$$\frac{\cancel{6}^{2}}{\cancel{15}_{5}} \cdot \frac{\cancel{5}^{1}}{14} = \frac{6}{42} = \frac{1}{7} = 0.143$$

$$\frac{6}{15} \cdot \frac{5}{14} = \frac{6 \cdot 5}{15 \cdot 14} = \frac{5 \cdot 6}{15 \cdot 14}$$

(5)

deck of 52 cards

$$\frac{52}{4} = 13$$

$P($4 diamonds$)$

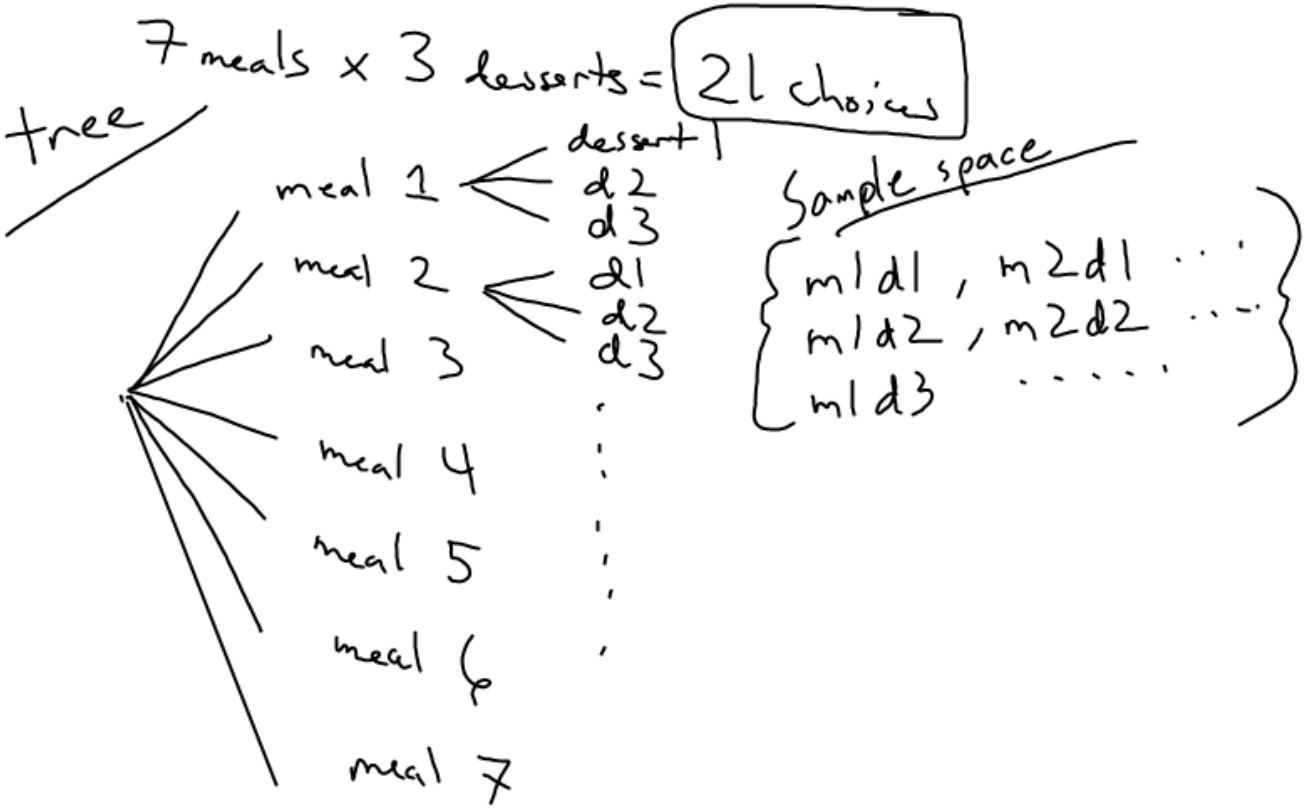
1st ♦ 2nd ♦ 3rd ♢ 4th ♢

$$\frac{13}{52} \cdot \frac{12}{51} \cdot \frac{11}{50} \cdot \frac{10}{49} = .00265$$

B?

1. 060728a, P.I. A.N.7

Max goes through the cafeteria line and counts seven different meals and three different desserts that he can choose. Which expression can be used to determine how many different ways Max can choose a meal and a dessert?



2. 010612a, P.I. A.N.7

Robin has 8 blouses, 6 skirts, and 5 scarves. Which expression can be used to calculate the number of different outfits she can choose, if an outfit consists of a blouse, a skirt, and a scarf?

$8 \cdot 6 \cdot 5 = 240$ choices of outfit

12. 080502a, P.I. A.N.7

Cole's Ice Cream Stand serves sixteen different flavors of ice cream, three types of syrup, and seven types of sprinkles. If an ice cream sundae consists of one flavor of ice cream, one type of syrup, and one type of sprinkles, how many different ice cream sundaes can Cole serve?

$16 \cdot 3 \cdot 7 =$ combinations of ice cream

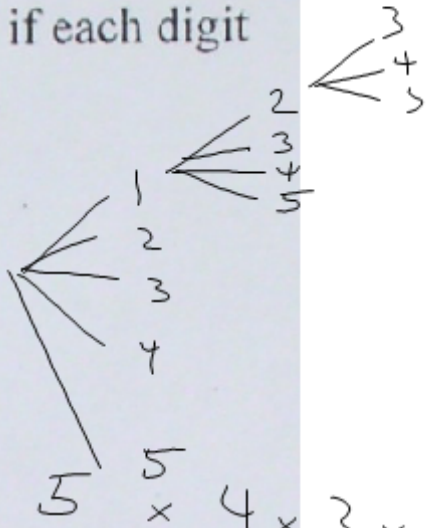
336

1 How many different five-digit numbers can be formed from the digits 1, 2, 3, 4, and 5 if each digit is used only once?

1) 120
2) 60
3) 24
4) 20

$5 \cdot 4 \cdot 3 \cdot 2 \cdot 1$

5 num 4 num



2 A locker combination system uses three digits from 0 to 9. How many different three-digit combinations with no digit repeated are possible?

1) 30
2) 504
3) 720
4) 1,000

$10 \times 9 \times 8$

(12) A certain state is considering changing the arrangement of letters and numbers on its license plates. The two options the state is considering are:
Option 1: three letters followed by a four-digit number with repetition of both letters and digits allowed
Option 2: four letters followed by a three-digit number without repetition of either letters or digits
[Zero may be chosen as the first digit of the number in either option.]
Which option will enable the state to issue more license plates? How many *more* different license plates will that option yield?

WSD431Φ

$26 \cdot 26 \cdot 26 \cdot 10 \cdot 10 \cdot 10$

~ 175 mil

WSDF123

$26 \cdot 25 \cdot 24 \cdot 23 \cdot 10 \cdot 9 \cdot 8$

~ 258 mil

13 In Jackson County, Wyoming, license plates are made with two letters (A through Z) followed by three digits (0 through 9). The plates are made according to the following restrictions:

- the first letter must be J or W, and the second letter can be any of the 26 letters in the alphabet
- no digit can be repeated

How many different license plates can be made with these restrictions?

$2 \cdot 26 \cdot 10 \cdot 9 \cdot 8$

J or W

A-Z

0-9

only 9 digits left to use

only 8 digits left

2) All seven-digit telephone numbers in a town begin with 746. How many telephone numbers may be assigned in the town if the last four digits do not begin or end in a zero.